



Eurocodes and their National Annexes in Montenegro

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Basic data on Montenegro

- Became independent in 2006
- State territory ~ 14.000 km²
- Population ~ 620.000



Responsible institutions

- **Ministry of Sustainable Development and Tourism**
- responsible for regulations in sectors: spatial development, construction and urban planning;
- **Institute for Standardization of Montenegro (ISME)** - adoption of standards and related documents;
- **Institute of Hydro-meteorology and Seismology**
(maps: wind, snow, isotherms and seismic hazards);
- **Geological Survey of Montenegro** - NDPs for EN 1997;
- **Faculty of Civil Engineering** – general education
- **Chamber of Engineers** – practical education of engineers



Existing relevant national regulations

- **Law on spatial development and constructions (2008/2014);**
- **Some regulations inherited from ex Yugoslavia (SFRY, FRY and S&M), based on JUS standards;**
- **Law on Construction Products, partly transposed contents of EU regulation no. 305/2011;**
- **IPA twinning project on Eurocodes (2012-2013);**
- **Action plans for Eurocodes adoption and implementation (adopted by Government of Montenegro in January 2014)**



Institutions involvement



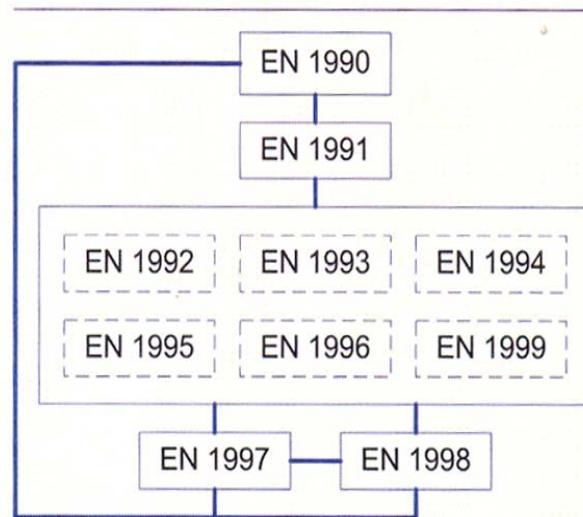
Institute for Standardization of Montenegro



- **April 2007 – Government established National Institute for Standardization (ISME), dealing with standardization issues at national level;**
- **For the purpose of Directive on construction products transposition(89/106/EEC) i.e. Regulation no.305/2011 into national legislation, ISME adopted harmonized standards following concerned regulation;**
- **In July 2011, ISME established Tehnical Committee ISME/TK 002: Eurocodes for managing adoption and implementation processes for Eurocodes and defining National Annexes**
- **In September 2012 Technical Committee established 8 working groups for all Eurocodes**



Technical Committee ISME/TK 002: Eurocodes – Groups



- EC 0 – EN 1990**
- EC 1 – EN 1991, EN 1996**
- EC 2 – EN 1992**
- EC 3 – EN 1993, EN 1999**
- EC 4 – EN 1994**
- EC 5 – EN 1995**
- EC 6 – EN 1998**
- EC 7 – EN 1997**



ISME/TK 002: Eurocodes - activities

- **EN 1990 - published as MEST EN 1990:2013 in Montenegro**
- **MEST EN 1990:2013/NA:2013 published in Montenegro**
- **Eurocodes parts EN 1991-1, EN 1991-3 and EN 1991-5, as well as their National Annexes, are prepared by Group for EC 1 and provided to ISME that is bound to realize technical text editing. Following it, TC meetings members shall discuss it and make the decision on its processing to Public Enquiry**



- **Text of the standard EN 1998-1 was translated into Montenegrin, technically processed, being in rnMEST EN 1998-1 stage**
- **TC made the decision on putting rnMEST EN 1998-1 to Public Enquiry, that is going to be carried out in recent time**
- **rnMEST EN 1998-1/NA – currently in preparatory stage and in the process of NDPs values determining**
- **Parameters defining critical periods on elastic spectral response diagram have not been yet defined.... institutions should jointly process relevant data using appropriate methodologies**
- **We expect the work on determining the values of these parameters to be finished by the end of the current year**

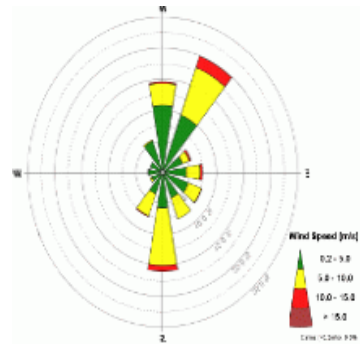
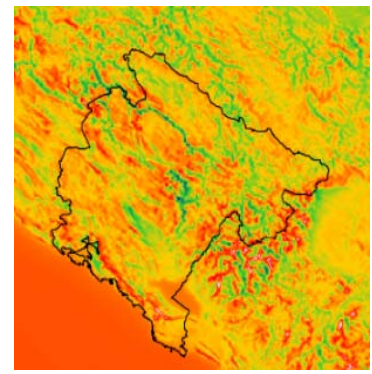
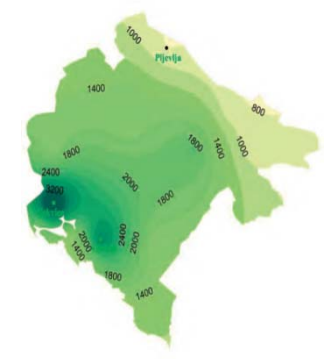
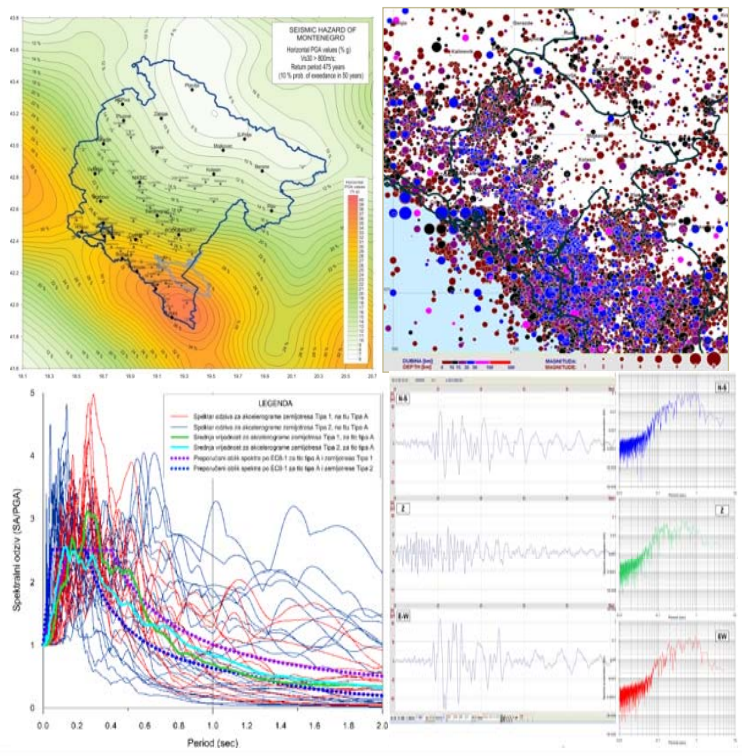


EN1998-1 NDPs: responsible Institute for Hydro- meteorology and Seismology



Seismic hazard data
Spectral response data
Strong motion data base
temperature
Soil type characterization

Snow loads data
Wind loads data
Max&min shade air



**BUILDING CAPACITIES FOR ELABORATION OF NDPs AND NAS
OF THE EUROCODES IN THE BALKAN REGION**
4-5 November 2014, Skopje



Faculty of Civil Engineering related activities

- **ECTS Catalogue adopted with new Eurocodes contents (implementation has started)**
- **National experts attended workshops on Eurocodes: Brussels (2008 & 2011), Lisbon (2012), Dublin (2013), than visited ASI, DIN and DIBt (2013)**
- **Every two years Faculty organize Symposiums on constructions - From Theory to Practice, partly devoted to Eurocodes implementation**
- **During several last years, in more than 40 cases PhD and Master theses as well as final diploma works, were prepared with the subjects on Eurocodes.**



Several seminars on Eurocodes organized by Montenegrin Chamber of engineers and Civil Engineering Faculty

- **First informative seminar on *Eurocodes implementation in Montenegro, 2009***
- **Round table *EU standards: EC 0 and EC 1, 2010***
- **Several conferences on *Eurocodes topics, 2010-2012***
- **Round table on *Construction products and European regulations, 2013,***
- **Second informative seminar on *Eurocodes implementation, 2013,* etc.**



BUILDING CAPACITIES FOR ELABORATION OF NDPs AND NAS OF THE EUROCODES IN THE BALKAN REGION

4-5 November 2014, Skopje



Seminars held in October 2013 covered the following topics

- **Overview and comparison of Eurocodes and existing National rules**
- **Explanation of Eurocode EN 1990**
- **EN 1991-1-1: Densities, self-weight, imposed loads for buildings**
- **EN 1991-1-3: Snow loads**
- **EN 1991-1-4: Wind action**
- **EN 1991-1-5: Thermal action**
- **EN 1998: Earthquakes - basic rules**
- **EN 1998: Seismic actions and rules for buildings**
- **EN 1992: Design of concrete structures**
- **EN 1993: Design of steel structures**
- **EN 1996: Design of masonry structures**



Expectations, specific problems and needs

- **Based on Action plan we expect adoption and implementation of Eurocodes to be finished until the end of 2017, including period of coexistence with old regulations,**
- **As promised, we expect the Government of Montenegro, as the interested party, provide financial support for the implementation of the process of adoption and implementation of Eurocodes in Montenegro,**
- **Small industrial capacities and therefore less involvement of business entities,**
- **Relatively poor existing research databases - necessary for preparation of NDPs in National annexes – rise requirement for more research activities**
- **We underlay the need for better regional cooperation: a regional center for Eurocodes would be useful.**



Thanks for your patience!

